AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Cancelled)

2. (Cancelled)

3. (Currently Amended) A slot array antenna according to claim [[1]]Z , wherein the dielectric constant of a dielectric material disposed in the radiating waveguide is 1 or more.

4. (Currently Amended) A slot array antenna according to claim [[1]]Z, wherein the power-feeding waveguide is a rectangular waveguide.

5. (Currently Amended) A slot array antenna according to claim [[1]]Z, wherein a traveling wave is to be generated in the radiating waveguide.

6. (Currently Amended) A slot array antenna according to claim [[1]]Z, wherein a matching slot is disposed at the terminal end of the radiating waveguide.

7. (Currently Amended) A slot array antenna ~~according to claim 1~~, comprising:

a power-feeding waveguide for feeding microwave power; and

a plurality of rectangular radiating waveguides connected to a plurality of windows which are disposed along the longitudinal direction of the power-feeding

waveguide, so as to guide the microwave power from the plurality of windows to the outside of the antenna;

wherein each of the radiating waveguides has a plurality of slots disposed along the longitudinal direction of the radiating waveguide; the interval "d" between adjacent slots is substantially the same as the wavelength λm of the microwave in the rectangular radiating waveguide; ~~wherein~~ and the slots formed on one side of the radiating waveguide are disposed such that they gradually deviate from the center axis in the longitudinal direction of the radiating waveguide.

8. (Currently Amended) A slot array antenna according to claim [[1]]7, wherein the slots provided on one side of the radiating waveguide are such that they form an inclination angle of 45° relative to the center axis in the longitudinal direction of the radiating waveguide.

9. (Currently Amended) A slot array antenna ~~according to claim 1~~, comprising:

a power-feeding waveguide for feeding microwave power; and

a plurality of rectangular radiating waveguides connected to a plurality of windows which are disposed along the longitudinal direction of the power-feeding waveguide, so as to guide the microwave power from the plurality of windows to the outside of the antenna;

wherein each of the radiating waveguides has a plurality of slots disposed along the longitudinal direction of the radiating waveguide; the interval "d" between the adjacent slots is substantially the same as the wavelength λm of the microwave in the

rectangular radiating waveguide; ~~wherein~~ and a [[slit]]coupling window having a variable width is disposed at the power-feeding portions for feeding power from the power-feeding waveguide to the radiating waveguide.

10. (Currently Amended) A slot array antenna according to claim [[1]]7, wherein the slots formed on one side of the radiating waveguide are selected from the group consisting of: slots perpendicular to the traveling direction of the electromagnetic field, slot pairs in the form of "staggered Λ", and slot pairs each of which is inclined at about 45° with respect to the traveling direction of the electromagnetic field.

11. (Currently Amended) A plasma processing apparatus comprising:

a plasma processing chamber for subjecting an object to a plasma treatment; and

antenna means for guiding microwave power into the plasma processing chamber so as to generate plasma in the plasma processing chamber;

wherein the antenna means comprises: a power-feeding waveguide for feeding microwave power; and a plurality of rectangular radiating waveguides connected to a plurality of windows which are disposed along the longitudinal direction of the power-feeding waveguide, so as to guide the microwave power from the plurality of windows to the outside of the antenna, wherein each of the radiating waveguides has a plurality of slots disposed along the longitudinal direction of the radiating waveguide; and the interval "d" between adjacent slots is substantially the same as the wavelength λm of the microwave in the rectangular radiating waveguide; and the slots formed on one side

of the radiating waveguide are disposed such that they gradually deviate from the center axis in the longitudinal direction of the radiating waveguide.

12. (Previously Presented) A plasma processing apparatus according to claim 11, wherein the interval "d" between adjacent slots is in the range of $0.75 < d/\lambda m < 1.25$, with respect to the wavelength λm of the microwave.

13. (New) A slot array antenna according to claim 9, wherein the dielectric constant of a dielectric material disposed in the radiating waveguide is 1 or more.

14. (New) A slot array antenna according to claim 9, wherein the power-feeding waveguide is a rectangular waveguide.

15. (New) A slot array antenna according to claim 9, wherein a traveling wave is to be generated in the radiating waveguide.

16. (New) A slot array antenna according to claim 9, wherein a matching slot is disposed at the terminal end of the radiating waveguide.

17. (New) A slot array antenna according to claim 9, wherein the slots provided on one side of the radiating waveguide are such that they form an inclination angle of 45 relative to the center axis in the longitudinal direction of the radiating waveguide.

18. (New) A slot array antenna according to claim 9, wherein the slots formed on one side of the radiating waveguide are selected from the group consisting of: slots perpendicular to the traveling direction of the electromagnetic field, slot pairs in the form of "staggered Λ," and slot pairs each of which is inclined at about 45 with respect to the traveling direction of the electromagnetic field.

19. (New) A slot array antenna according to claim 9, wherein the slots formed on one side of the radiating waveguide are disposed such that they gradually deviate from the center axis in the longitudinal direction of the radiating waveguide.

20. (New) A plasma processing apparatus according to claim 11, wherein the dielectric constant of a dielectric material disposed in the radiating waveguide is 1 or more.

21. (New) A plasma processing apparatus according to claim 11, wherein the power-feeding waveguide is a rectangular waveguide.

22. (New) A plasma processing apparatus according to claim 11, wherein a traveling wave is to be generated in the radiating waveguide.

23. (New) A plasma processing apparatus according to claim 11, wherein a matching slot is disposed at the terminal end of the radiating waveguide.

24. (New) A plasma processing apparatus according to claim 11, wherein the slots provided on one side of the radiating waveguide are such that they form an inclination angle of 45 relative to the center axis in the longitudinal direction of the radiating waveguide.

25. (New) A plasma processing apparatus according to claim 11, wherein the slots formed on one side of the radiating waveguide are selected from the group consisting of: slots perpendicular to the traveling direction of the electromagnetic field, slot pairs in the form of "staggered Λ," and slot pairs each of which is inclined at about 45 with respect to the traveling direction of the electromagnetic field.

26. (New) A plasma processing apparatus comprising:

a plasma processing chamber for subjecting an object to be processed to a plasma treatment; and

antenna means for guiding microwave power into the plasma processing chamber so as to generate plasma in the plasma processing chamber;

wherein the antenna means comprises:

a power-feeding waveguide for feeding microwave power; and

a plurality of rectangular radiating waveguides connected to a plurality of windows which are disposed along the longitudinal direction of the power-feeding waveguide, so as to guide the microwave power from the plurality of windows to the outside of the antenna,

wherein each of the radiating waveguides has a plurality of slots disposed along the longitudinal direction of the radiating waveguide; and the interval "d" between adjacent slots is substantially the same as the wavelength λm of the microwave in the rectangular radiating waveguide; and a coupling window having a variable width is disposed at the power-feeding portions for feeding power from the power-feeding waveguide to the radiating waveguide.

27. (New) A plasma processing apparatus according to claim 26, wherein the dielectric constant of a dielectric material disposed in the radiating waveguide is 1 or more.

28. (New) A plasma processing apparatus according to claim 26, wherein the power-feeding waveguide is a rectangular waveguide.

29. (New) A plasma processing apparatus according to claim 26, wherein a traveling wave is to be generated in the radiating waveguide.

30. (New) A plasma processing apparatus according to claim 26, wherein a matching slot is disposed at the terminal end of the radiating waveguide.

31. (New) A plasma processing apparatus according to claim 26, wherein the slots provided on one side of the radiating waveguide are such that they form an

inclination angle of 45 relative to the center axis in the longitudinal direction of the radiating waveguide.

32. (New) A plasma processing apparatus according to claim 26, wherein the slots formed on one side of the radiating waveguide are selected from the group consisting of : slots perpendicular to the traveling direction of the electromagnetic field, slot pairs in the form of "staggered Λ," and slot pairs each of which is inclined at about 45 with respect to the traveling direction of the electromagnetic field.

33. (New) A plasma processing apparatus according to claim 26, wherein the slots formed on one side of the radiating waveguide are disposed such that they gradually deviate from the center axis in the longitudinal direction of the radiating waveguide.